



Noxious Times

a quarterly publication of the California Interagency Noxious Weed Coordinating Committee

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CDFA Proposes Addition of New Weeds to Noxious Weed List

The California Department of Food and Agriculture is preparing to issue a Notice of Proposed Rulemaking which will propose the addition of 8 exotic invasive plants to the CDFA Noxious Weed List in the California Code of Regulations (CCR).

The list (see box) is the result of a request by the Nursery Committee of the California Agriculture Commissioners and Sealers Association (CACASA). The CACASA Nursery Committee has received input from ag commissioners, CDFA scientists and conservation groups from within the state to put together this list.

When the Notice of Proposed Rulemaking is issued a copy of the proposed rules will be mailed to interested individuals for notice and comment. The comment period will last 45 days. If you would like to be sent a copy of the packet, send an email to noxtimes@cdfa.ca.gov as follows

Subject: Rulemaking packet
Message: Please send a rulemaking notice

Name: Jane Doe
Address: 1 234 Thistle Ave.
City, State: Weedville, CA
ZIPCODE: 91919

The packet cannot be sent by email!

The Department will post the information regarding this proposed regulatory action on its internet website (www.cdfa.ca.gov/cdfa/pendingregs).

Proposed Weeds

The following exotic invasive plants are proposed additions to the CDFA Noxious Weed List in the California Code of Regulations.

- 1) **Spanish broom** (*Spartium junceum*)
- 2) **Jubata grass** (*Cortaderia jubata*)
- 3) **Giant reed** (*Arundo donax*)
- 4) **Salt cedar** (*Tamarix chinensis*, *T. gallica*, *T. parviflora*, *T. ramosissima*)
- 5) **Tocalote** (*Centaurea melitensis*)
- 6) **Cape ivy** (*Senecio mikanioides*.
Synonym: *Delairea odorata*)
- 7) **Bull thistle** (*Cirsium vulgare*)
- 8) **Tree of heaven** (*Ailanthus altissima*)

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Chairman's Message: Steve Schoenig

A new year has come with many changes afoot in the world at large and in our own weed group - the California Interagency Noxious Weed Coordinating Committee (CINWCC). I have been chosen to chair the CINWCC group for the next two years and hope to carry on the tradition of meetings that bring the state, federal and county agencies together, along with our stakeholders, to share information, set common priorities and to promote strategic and integrated weed management in the state.

A would like to extend a heartfelt thank you to two individuals who have worked to make CINWCC go over the past two years.

Cheri Rohrer, of the US Forest Service has been the CINWCC Chairperson since January 2000 and has presided over a number of well attended and useful meetings. She was instrumental in kicking off the Weed Free Forage working group in California and continues in her noxious weed coordination role at the USFS Regional Office in Vallejo.

Carri Piroso (Benefield before recent betrothal to weedman Chris Piroso) is leaving the Sacramento area to staff CDFA's northeast district weed eradication office in Redding. Carri has edited the Noxious Times for over two years and has set a track record for great looking issues that have come out on a very punctual schedule. Carri has served for many years as a behind the scenes enabler for CINWCC – taking notes, maintaining the email list, helping to line up speakers, facilitating discussions, etc.. Good luck to Carri and Chris up north – may the fish bite early and often. ❖

Noxious Times is a publication of the California Interagency Noxious Weed Coordinating Committee. The committee was formed in 1995 when 14 federal, state, and county agencies came together under a Memorandum of Understanding to coordinate the management of noxious weeds. The committee's mission is to facilitate, promote, and coordinate the establishment of an Integrated Pest Management partnership between public and private land managers toward the eradication and control of noxious weeds on federal and state lands and on private lands adjacent to public lands.

The *Noxious Times* newsletter intends to help the committee achieve its goals of coordination and exchange of information by providing land managers throughout the state with information on weed control efforts, news, and successes.

Noxious Times is published quarterly by staff of the Integrated Pest Control Branch at the California Department of Food and Agriculture. We welcome submissions for our upcoming issues. Please send to: CA Department of Food and Agriculture, ATTN: Noxious Times, 1220 N Street, Room A-357, Sacramento, CA 95814 or e-mail: noxtimes@cdfa.ca.gov

If you have a colleague whose name you would like to add to our mailing list, please send mailing information to the address above.

Noxious Times Editorial Staff: Steve Schoenig, Matt Caldwell. Text written by staff unless otherwise noted.

Exotic Plant Management Teams – A New Mobile Strike Force for California's National Parks

by Kim Cooper and
Barbara Moritsch

After habitat loss, invasive or exotic species are considered the greatest threat to our natural heritage. They are implicated in the listing of 42 percent of all species protected by the Endangered Species Act.

Additionally, approximately 1.5 million acres of national parklands are infested by invasive plant species. Therefore, the threat of invasive species has grave implications for the preservation of natural and cultural resources throughout the national park system.

A new weapon to combat exotic plant species was launched by the National Park Service in 2000. The Exotic Plant Management Team (EPMT) was modeled after the coordinated rapid response approach used in wildland fire fighting as it is well suited to effective control of exotic plants. The first test of the EPMT concept was made in 1997 at Lake Mead National Recreation Area (Nevada and Arizona) and served national park units throughout the Southwest. Its success led to the establishment of four EPMTs through the Park Service in 2000. Four more teams are funded for 2002. The long term goal is to have EPMT's deployed throughout the Park Service wherever serious threats to resources

are identified.

The success of the EPMT derives from the high fitness level and exotic plant management expertise of the team, as well as its ability to adapt to local conditions and needs. Each team employs the

expertise of local citizens and the capabilities of local agencies. Each sets its own work priorities based on the following factors: severity of threat to high quality natural areas and rare species; extent of targeted infestation; probability of successful control and potential for restoration and opportunities for local public partnerships.

The California Exotic Plant Management Team (CEPMT) is a newly formed team devoted to removal of a suite of non-native plants from 12 parks in California. Point Reyes National Seashore will serve as the base of operations for the



Everglades National Park, Royal Palm Hammock Exotic Plant Control: Royal Palm Hammock- Pre-treatment 11/7/00.

team, and other parks served include Cabrillo National Monument, Channel Islands National Park, Devil's Postpile National Monument, Golden Gate National Recreation Area, John Muir National Historic Site, Lassen Volcanic National Park, Redwood National Park, Santa Monica Mountains National Recreation Area, Sequoia and Kings Canyon National Parks, Whiskeytown National Recreation Area, and Yosemite National Park. Several of these parks have existing cooperative agreements with their local Weed Management Areas (WMA's), and team leadership will work to develop further agreements and partnerships to increase the teams range and effectiveness.

Population Action International and The Nature Conservancy have determined that the CEPMT region is a "global biodiversity hotspot" - one of 25 terrestrial regions of the world where biological diversity is most concentrated and the threat of loss most severe. The parks are plagued with acres of exotic plants due to centuries of habitat manipulation. The exotics are rapidly replacing native plants in rare habitat types including coastal sage scrub, southern maritime chaparral, coastal and island dunes, and montane meadows. The immediate control of these exotics is critical to protect a large suite of endemic, rare, threatened and endangered species. The team will focus on 33 high priority weed species, and will be specially trained to remove particularly onerous occurrences that cannot be

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Royal Palm Hammock - Post-treatment 12/5/00 Several choking vines; Arrow Vine, Air Potato, and Pathos, as well as other species were eliminated. This left room for the native plants to revegetate.

Target: Hydrilla The California

By J. Robert Leavitt, Patrick Akers, Fred Hrusa, and Courtney Albrecht, CDFA

At the present time, hydrilla (*Hydrilla verticillata* (L.F. Royle)) is the only "A" rated submerged aquatic noxious weed in California. It is also the only noxious weed in California with a specific mandate from the Legislature that it be eradicated from the State wherever it is found (California Food and Agriculture Code Section 6048). What is it about this submerged aquatic weed that makes it so undesirable and how is the eradication program progressing?

Hydrilla is a non-native, invasive weed in California. It is native of Eurasia. The first detection of hydrilla in California was in 1976 when it was found in Lake Ellis in Marysville. The next year, it was detected in Imperial County in the All American Canal and in San Diego County in Lake Murray. It is believed that hydrilla was introduced into the State through the aquarium and/or aquaculture trade.

Hydrilla spreads rapidly once introduced, displacing native vegetation and producing thick mats (Figure 1) that can clog waterways. By 1986, hydrilla had infested over 600 miles of canals, drains, and laterals in the Imperial Irrigation District. It has been estimated that hydrilla can reduce the water flow in canals by as much as 90%.

Native fish and wildlife are also displaced as hydrilla replaces the natural



Figure 1. A mat of hydrilla

food plants in the ecosystem.

In addition, hydrilla can impede navigation in infested channels, interfere with the functioning of water control structures, block hydroelectric generators, and imperil human life. By slowing the movement of water, hydrilla can also increase the breeding grounds for mosquitoes.

Ken Langeland at the Center for Aquatic Plants at the University of Florida calls hydrilla "the perfect aquatic weed" because of its ability to invade and dominate so many different aquatic ecosystems (Langeland, 1996). And Nathan Dechoretz of the California Department of Food and Agriculture (CDFA) says "the reproductive capacity of hydrilla indicates that the ability of the water conveyance systems in the State to deliver water in a timely manner would be in serious jeopardy if the plant becomes widely established."

One reason that hydrilla is so invasive is that it has many different reproductive structures. Hydrilla produces both tubers (below ground enlarged buds) and turions (enlarged buds attached to the stems), collectively called hybernacula (Figures 2 and 3). It has been shown that tubers can persist in the hydrosol for several years where they produce a tuber bank that may

extend the life of an infestation far into the future. In addition, any plant fragment larger than one whorl of leaves can reproduce a new plant when washed downstream in currents or floods. Sexual reproduction presumably occurs also; however, the environmental conditions under which seedlings are produced and established are unknown, and the submerged seedlings are rarely detected.

A second reason that hydrilla is invasive is due to its rapid growth rate. Hydrilla has relatively low rates of respiration and a high rate of photosynthesis, compared to other aquatic plants. It can elongate up to one inch per day, making it a fierce competitor for sunlight in the water column.

A third reason that hydrilla is invasive is that there is a lack of natural predators (herbivores, parasites, or pathogens) in California. (This is typical for non-native plants.)

Hydrilla also exists in California in two genotypes, dioecious and monoecious. The dioecious form has flowers of one sex only on each genetic individual. Because this species can reproduce asexually, different ramets or separately rooted plants may actually be parts of the same individual, and what appears to be a single sex population is in actuality just an extended single or few individuals of one sex. Monoecious individuals have individual flowers with only staminate or



Figure 2. Tubers of hydrilla



Figure 3. Turions of hydrilla.

Hydrilla Eradication Program



Figure 4. Locations of active Hydrilla Eradication Projects

pistillate parts, but these occur on the same genetic individual. Dioecious plants often branch more freely near the water surface than do monoecious plants, forming large submerged mats. In contrast, monoecious plants tend to branch freely near the rooting point, producing many stolons and a forest of vertical shoots. The genetic or ecological significance of this apparent dimorphism is unknown.

For the reason that California is dependent on the movement of water for public, industrial, and agricultural uses, and hydrilla is such a threat to this water movement, hydrilla was declared an "A" rated noxious weed by CDFA and was banned by the California Legislature in 1977 (California Code of Regulations 3591.7 amended 4/83 to 3962). In

addition, a "State of Emergency" was declared in 1985 after hydrilla was found in ponds in Redding near the Sacramento River. CDFA was named the Lead Agency on the fight against hydrilla, and the California Hydrilla Eradication Program started in 1977 (California Food and Agriculture Code Section 6048). In 1986, CDFA was given the statutory authority to enter into cooperative agreements with other agencies to develop a biological control program (California Food and Agriculture Code Section 6049). Today, the Hydrilla Eradication Program combines resources and expertise of CDFA with the California Department of Boating and Waterways, the University of California, the United States Department of Agriculture's Exotic and Invasive Weed Control Program, the United States Army Corps of Engineers (responsible for "waters of the United States"), and the United States Bureau of Reclamation. The lead agency in each county in California in which hydrilla is detected is the County Agricultural Commissioner. The Program also involves the support of many local agencies and groups such as the Yolo County Flood Control and Water Conservation District, the Imperial Irrigation District, and Big Valley Rancheria.

Since it was first found in California in

1976, hydrilla has also been detected in Clear Lake in Lake County, in ponds near Redding in Shasta County, in Bear Creek and associated ponds in Calaveras County, in ponds in San Francisco, Santa Barbara, Riverside, Monterey, Sutter, and San Bernardino Counties, in a small lake in Sonoma County, in Eastman Lake and the Chowchilla River in Madera and Mariposa Counties, and in ponds in Tulare County. The largest current infestation is in Clear Lake where 1335 acres are under active eradication. At the present time, CDFA has eight ongoing hydrilla eradication projects (Figure 4).

The Hydrilla Eradication Program includes several major components. These are:

- 1). Identification
- 2). Exclusion
- 3). Quarantine
- 4.) Survey and detection
- 5.) Research
- 6). Cultural, biological, physical, and chemical eradication methods
- 7). Public Awareness and action

The CDFA Plant Pest Diagnostic Botany Laboratory identifies or confirms identification of samples submitted from State or County field survey teams, Nursery Inspectors, and out-of-state shipments from aquarists and other parties. The monotypic Hydrilla is polymorphic (variable in form), with the most variable morphological structures being the leaf length, number of leaves per whorl, presence or absence of abaxial midvein trichomes (sharp-toothed spines on the lower leaf surface), and the presence, frequency, and laciniation of the squamulae intravaginales (minute scales in the leaf axils). Presence of the latter structures can unequivocally determine Hydrilla but

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Figure 5A. Close up of hydrilla plant.

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their absence is not uncommon. The most commonly used identification characteristic is the relatively prominent leaf margin toothiness which separates *Hydrilla* from the similar genera *Elodea* and *Egeria* (Figures 5A and 5B).

For exclusion, the CDFA Pest Exclusion Branch (CDFA-PE) prevents hydrilla from entering the state. At the Border Stations on every major highway entering the State, CDFA-PE inspects boats for hydrilla before they are allowed to enter the State. CDFA-PE also inspects pet stores and aquaculture stores for aquariums and water gardens that might be infested with hydrilla. In addition, all shipments of aquatic plants, and any other article capable of transporting hydrilla, are inspected upon entry into the State.

Quarantines are managed by the CDFA Integrated Pest Control Branch (CDFA-IPC) in conjunction with the local County Agricultural Commissioner. Quarantines can be total or partial. Quarantines can restrict any activity on a given water body such as boating, fishing, hunting, irrigation, drinking, etc.



Figure 5B. Left: close-up of *Hydrilla* leaf showing leaf margin toothiness; Right: close-up of *Egeria*.

Quarantines typically restrict movement of watercraft until all hydrilla plants, fragments, or tubers are removed and destroyed. For instance, Eastman Lake near Chowchilla was closed to all recreational uses for three years after hydrilla was detected there in 1989.

CDFA-IPC also periodically surveys many of the water bodies in the State searching for hydrilla. The earlier hydrilla is detected, the smaller the resulting infestation, and the easier the eradication will be. Surveys are made of streams and rivers, ponds, lakes, and the Sacramento Delta. Surveys are made by visual inspection for growing hydrilla plants and mats, and by using grappling hooks to sample the aquatic vegetation growing near the bottom of each water body. (Hydrilla has never been detected in the Delta.)

Research efforts on hydrilla eradication are conducted by many agencies and groups, including the USDA-ARS Exotic and Invasive Weed Laboratory housed at the University of California, Davis. Research efforts are on-going into the biology and ecology of hydrilla, as well as methods to improve control and eradication. For instance, recent research has examined the possibility of using acetic acid as a control agent for

the hydrilla tubers in the hydrosol (Spencer and Ksander, 1999).

CDFA-IPC implements eradication efforts wherever hydrilla is found. Efforts usually start within 7 to 14 days of detection. Eradication efforts can include complete or partial drainage, manual removal of plants, dredging of infested hydrosol (to remove tubers), treatment with herbicides, and/or biological control with the triploid grass carp. The herbicides used are copper to rapidly destroy top growth, and fluridone for control of germinating seedlings. In Riverside and Imperial counties, the triploid grass carp (also called the white amur, *Ctenopharyngodon idella*) can be used for hydrilla control. This carp is a voracious consumer of aquatic plants, and is especially fond of hydrilla. It is produced in a fish hatchery belonging to the Imperial Irrigation District.

Public Awareness is essential to the Hydrilla Eradication Program in order for quarantines to be effective and to aid the survey and detection efforts. CDFA-IPC and the County Agricultural Commissioners give numerous public speeches and presentations on hydrilla. In quarantine areas, signs are established along roadsides and near marinas to warn boaters and fishermen to clean their boats and tackle before transporting them to another waterway. Also, CDFA-IPC and other parties produce

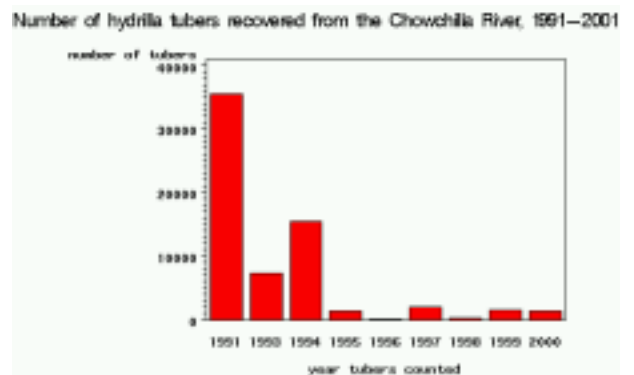


Figure 6. Number of hydrilla tubers recovered from the Chowchilla River by dredging operations, 1991–2000.



Figure 7A. Aerial View of hydrilla in Costa Pond A6 (Tulare Co.) in 1996



Figure 7B. Aerial view of hydrilla in Costa Pond A6 (Tulare Co.) in 2001.

pamphlets that are distributed to homeowners (Clear Lake), boat and bait shops, and other public agencies to help the public identify hydrilla and know where to report it.

The Hydrilla Eradication Program is working and has been successful in eradicating hydrilla (California Department of Food and Agriculture 2001). The original infestation at Lake Ellis was declared eradicated in 1984 after draining, dredging and chemical treatment. Hydrilla in Lake Murray was declared eradicated in 1994 after diver assisted dredging and chemical treatment. The infestation in a small pond in San Francisco County was declared eradicated in 1991 after lining with asphalt. Other counties in which hydrilla has been completely eradicated are Santa Barbara, Riverside, Monterey, Los Angeles, Sonoma, Sutter, and San Bernardino.

Other sites have seen progress toward eradication. The infestation in the Imperial Irrigation District has been decreased from the original 600 miles of infested canal to a few scattered plants in a two-mile (cumulative) area. This is due to dredging, manual removal, chemical treatment, and use of the triploid grass carp. The infestation at Clear Lake is down to only 41 plant finds in year 2001 compared to hundreds a few years ago, due mostly to chemical treatment. In the Eastman Lake/

Chowchilla River complex, the quarantine was amended to allow shore fishing on Eastman Lake in 1992 and expanded continually thereafter to no restrictions today (due to hydrilla). The last hydrilla plant that was seen in Eastman Lake was in 1992. In the Chowchilla River, plants and tubers are still found, but the numbers have declined dramatically since 1991 (Figure 6). The reductions in both Eastman Lake and the Chowchilla River are due to manual removal, dredging, and chemical treatment. In Tulare County, the number of plants in pond A6 has been reduced from uncountable in 1996 to 58 in 1999. (Figures 7A and 7B). This reduction in Tulare County is also due to manual removal, dredging, and chemical treatment. In the Redding ponds, of the

17 ponds in which hydrilla was found; only two have had hydrilla detections in the last two years. In the Redding ponds, the main treatment is chemical. In Bear Creek in Calaveras county, of the original 10 ponds in which hydrilla was found, only one has had a hydrilla detection in the last 3 years. This reduction is due to manual removal, dredging, and chemical treatment.

Clearly, the California Hydrilla Eradication Program is working and is essential to keeping the water flowing in California.

What can you do to help? The greatest help you can give is to the Survey and Detection effort. If you see an aquatic weed meeting the description of hydrilla, report it to your local County Agricultural Commissioner. ❖

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Profile: Plant Protection

Plant Protection and Quarantine (PPQ) is a branch of APHIS,

Plant Protection and Quarantine (PPQ) is a branch of APHIS, the Animal and Plant Health Inspection Service. Its mission is to *safeguard agriculture and natural resources from the risks associated with the entry, establishment, or spread of animal and plant pests and noxious weeds. Fulfillment of its safeguarding role ensures an abundant, high-quality, and varied food supply, strengthens the marketability of US Agriculture in domestic and international commerce, and contributes to the preservation of the global environment.*

Plant Protection and Quarantine's Center for Plant Health Science and Technology (CPHST) in Raleigh, North Carolina was created to provide the science and technology framework for regulatory decision makers. Working with professional societies and stakeholders, scientists at CPHST analyze pathways for introductions of invasive species, perform pest risk assessments, and work on methods to eradicate or control introduced species. They research modern scientific methods to exclude, detect, and eradicate newly introduced weeds of quarantine significance.

Plant Protection and Quarantine officers advise importers and exporters about plant health restrictions. For instance, permits are required to import noxious weed seeds. PPQ Officers have information on which plants are federal noxious weeds, how to obtain an import permit, what type of containment facility is needed to house noxious weeds and how to de-vitalize the weeds to prevent escape into the environment. Any person who imports a noxious weed into the United States or moves seeds or plant parts of noxious weeds interstate requires a permit. Exclusion decisions are based on risk assessments. In addition, the importation of plants and many plant products requires a phytosanitary certificate, which is a document which states that the plant meets the importing requirements of the United States and has been inspected at the country of origin for pests and diseases. PPQ facilitates exports by preparing phytosanitary documentation for plant material leaving the country.

PPQ Officers work in foreign countries in preclearance programs to prevent entry of pests into the United States at the source. In conjunction with APHIS' International Services, PPQ tracks foreign animal diseases and plant pest distribution. In some instances, we clear passenger bags in foreign countries or US Territories prior to their boarding flights to come to the United States.

PPQ officers work at international airports, seaports,

border stations and mail facilities to inspect passengers, cargo and vessels for plant and animal products which could bring in pests, diseases or weeds. Working in close cooperation with US Customs inspectors and Immigration and Naturalization inspectors, PPQ officers interview passengers to determine whether they may have items of agricultural interest, such as fruit, meat, soil, snails or noxious weeds. Baggage is often prescreened by x-rays or detector dogs to determine which pieces need to be looked at more closely. Likewise, officers read manifests, inspect sea, air, truck and rail cargo and mail parcels for commodities which are harmful to the agriculture or environment of the United States, or which may carry hitchhiking pests arriving with imported commodities. Prohibited shipments are seized and destroyed or returned to origin. Regulated cargo or contaminated cargo must meet import restrictions, undergo treatment to mitigate risk, or be returned to origin. Commercial importers are usually given the option to treat, return to origin or destroy infested commodities. Vessel garbage is sterilized so pests and diseases cannot survive that pathway into the United States.

Eleven Plant Inspection Stations inspect incoming plant propagative material. It is searched for evidence of weed seeds, disease and insect pests. PPQ has plant pathologists, entomologists, and botanists on staff to identify plant material and pests. When local identifiers cannot identify specimens, samples are sent to national identifiers or specialists. Digital images can speed identification of pests by sending close-up pictures of a pest directly to an identifier, who can send back a determination immediately without waiting to send the actual specimen via couriers.

That way, fragile and perishable cargo is not held unnecessarily.

PPQ works with state and local agencies to locate and delimit new pest introductions. If foreign pests manage to get through our first line of defense at the borders, PPQ takes emergency action to limit the damage to US Agriculture and the environment. PPQ combats plant pests and weeds, emphasizing biological control and integrated pest management. PPQ cooperates with state plant health officials and industry and provides financial and technical assistance. PPQ works with other federal, state, tribal, local government, industry and community organizations to find effective methods to control or eradicate pests. One such partnership program is the Pulling Together Initiative where APHIS,

and Quarantine

By Carolyn Pizzo

the Animal and Plant Health Inspection Service of the USDA

Bureau of Land Management (BLM), Bureau of Reclamation (BOR), Department of Defense (DOD), Forest Service (FS), Fish and Wildlife Service (FWS), and National Park Service (NPS) support coordinated programs with public and private entities to prevent, manage, or eradicate invasive and noxious plants and to increase public awareness of the adverse impacts of invasive or noxious plants. Weed management areas are set up with federal funds and matching funds from state, local and private entities.

PPQ's Noxious Weed authority is derived from the Plant Protection Act of 2000 which superseded the Federal Noxious Weed Act and several other plant protection authorities. The Federal Seed Act provides APHIS authority to regulate noxious weed seeds in agricultural or vegetable seeds in foreign commerce. APHIS is also able to regulate the interstate movement of noxious weeds if they derived from prohibited material. Violators of the Plant Protection Act may be subject to forfeiture of the noxious weed, notice of violation, civil penalties, or criminal prosecution. PPQ has the responsibility to mitigate the risk of weed establishment by hold notice, seizure, quarantine, destruction, or treatment actions at the owner's expense.

In California, PPQ has supported the cooperative effort with California Department of Food and Agriculture (CDFA) to eliminate hydrilla. Through the use of triploid grass carp and dredging, hydrilla has been eliminated from many of California's waterways and many other populations are reduced significantly.

When Giant Salvinia was found in the nursery trade for pond use, USDA inspectors visited nurseries, garden and pond suppliers to survey for Salvinia. In cooperation with CDFA and county agriculture personnel, PPQ supervised destruction of Salvinia populations. Catalog and internet companies and chain stores were contacted to recall and destroy stocks of this invasive aquatic weed under PPQ

supervision. PPQ has worked with state and federal agencies to eradicate Salvinia found in the Colorado River by mechanically cleaning the sides of the drain. Chemical control is also being used. In cooperation with CDFA and ARS, PPQ is working to obtain permits to import and release the biocontrol agent, *Cyrtobagous salviniae* beetle, into California.

PPQ has worked with CDFA to eliminate *Salsola vermiculata*, which is a host of the beet leafhopper, a vector of curly top virus. Yearly surveys of San Luis Obispo and Kern Counties coupled with hand removal of plants have virtually eliminated this noxious weed. This year PPQ and CDFA have found no plants for the first year. Another survey is planned in late November, 2001.

PPQ cooperates with CDFA in funding a scientist at Albany, California's Agricultural Research Service laboratory to research methods to control yellow star thistle, among other weeds. Yellow star thistle is one of the most harmful weeds in the state. Several biological control agents have been released

to attack various parts of the plant.

As travel and cargo movement increase, the likelihood of introducing invasive weed species into the United States increases. They can arrive as deliberate introductions, through smuggling, or associated with cargo or passenger baggage. Ideally, PPQ would stop all these introductions at the border. Secondly, PPQ officers strive to detect introductions early, eradicate them before they can become established, or learn to control them at an economically effective and environmentally sensitive level. Regulations are promulgated to limit invasive species' introduction while allowing trade and travel. ❖

The PPQ article was submitted by Carolyn Pizzo, State Operations Support Officer, USDA, APHIS, PPQ. (916) 857-6241 Carolyn.Pizzo@aphis.usda. Among her responsibilities are Sudden Oak Mortality, Glassy Winged Sharpshooter/ Pierce's Disease, Fruit Flies and Invasive Species.



Salvinia
CDFA/IPC- R.J. Helton

California Invasive Weed Awareness Coalition (CALIWAC) to Meet March 22

The California Invasive Weed Awareness Committee (CaliWAC) is a new coalition group that will focus on promoting education and outreach in the fight against invasive and noxious weeds. Primarily a collaboration of conservation, industry and advocacy groups, the Committee will work together with state, county and federal agencies and Weed Management Areas on statewide awareness campaigns and other education projects. One sub-committee will focus specifically on promoting the awareness of invasive weeds to policy makers at both the state and federal level. Stay tuned for further developments from this group. Contact chairman Bob Pickard at bpickard@sierratel.com if you would like to become involved with this group. The next meeting is scheduled for March 22nd in Sacramento.

Chair: Mr. Bob Pickard, Mariposa County Supervisor, Regional Council of Rural Counties Delegate

Mission: Increase awareness of and action on the invasive weed issue in California.

Goals:

- 1.) Provide a public forum to increase awareness of the detrimental environmental and economic effects of invasive weeds and contribute to solutions for invasive weed issues.
- 2.) Promote increased funding for management of invasive weeds.
- 3.) Influence state and national policy on invasive weeds.
- 4.) Support the development and implementation of a statewide management plan for invasive weeds.

Committees:

Education Committee – To promote invasive weed awareness, educate and coordinate grassroots and WMA efforts, coordinate field tours, develop an *Invasive Weed Awareness Week*, support/promote national invasive weed activities.

Statewide Weed Plan & Summit Committee – Assist the California Department of Food and Agriculture with the development and adoption of a *California Invasive Weed Management Plan* and facilitate a public forum.

Legislative & Funding Committee – Identify and seek all sources of funding for management of invasive weeds, work with CDFA to promote adoption and on-going funding of the *California Invasive Weed Management Plan*.

Events:

·Host field tours for Legislators, staff & policy makers throughout the state, including East Bay Park District, Sacramento and southern California.

·Develop a statewide *Invasive Weed Awareness Week* when Weed Management Areas (WMA) could hold field tours to showcase their accomplishments to elected officials and the public.

·Assist CDFA in hosting a *Weed Summit* to gather input and rally support for the *California Invasive Weed Management Plan*.

Invasive Weed Awareness Coalition (IWAC) Hosts Third National Invasive Species Awareness Week

The Invasive Species Awareness Coalition was established in the mid 1990's to increase the awareness of invasive vegetation among United States congressional members. In the past two years, this coalition hosted the highly successful National Invasive Weed Awareness Week (NIWAW) that brought many weed fighters to Washington, DC to meet with congressional delegations and agency administrators.

This Year, the National Invasive Weeds Awareness Week 2002" (NIWAW III) will be held in Washington, DC the week of February 25 to March 1, 2002 so that people and groups from across the country can focus national attention on the severe problems created by invasive weeds. Individuals and organizations with an interest in this issue are invited to participate in this event that will build on the foundation and successes begun with NIWAW 2000 and 2001. NIWAW III events are designed to focus on the important and critical role that the Federal government must play to help the U.S. deal with the problem of invasive weeds. The schedule has been designed to provide ample time for participants to visit Congressional offices and discuss invasive plant issues from their part of the country. Those seeking Congressional visits are encouraged to make appointments before travelling to Washington D.C. to ensure their legislators and staff are available. Although additional activities are still being planned, the week's activities currently include:

A Monday morning policy breakfast to brief participants on

key national invasive weed issues and the week's activities.

Meetings with Federal agencies active in invasive weed management and control.

A poster session for Federal policy makers showcasing invasive weed problems and innovative management strategies from the country's top practitioners and researchers.

Social events for participants to meet their counterparts from around the country and strengthen relationships with those who share common objectives on invasive weed management.

A Congressional reception announcing grant recipients from the "Pulling Together Initiative."

A Congressional briefing or hearing on a top invasive weeds issue.

A concluding meeting for NIWAW III participants.

NIWAW III is being sponsored by the Invasive Weeds Awareness Coalition, a Washington D.C based coalition dedicated to increasing both Federal and public awareness of the problems and needs associated with invasive weeds. NIWAW III's events will be open to the public, and further details will be distributed as they become available. Additional information will also be posted on the NIWAW website at www.nawma.org/niwaw.htm ❖

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removed by existing park personnel or volunteers (e.g., those that are in remote, difficult to access locations). They will maintain arduous duty fitness levels, will be trained in the safe use of chain saw and herbicides, and will be able to work in challenging and remote environments. The CEPMT provides a highly trained, mobile strike force of invasive plant management specialists to assist parks in California with the critical challenge of invasive exotic plant management. ❖

Barbara Moritsch and Kim Cooper are the Chief of Vegetation Management and Weed Programs Manager, respectively, at Point Reyes National Seashore. They can be reached at (415) 464-5196. Kim_Cooper@nps.gov, Barbara_Moritsch@nps.gov.

Exotic Plant Management Teams in Operation

Teams in Operation

Pacific Islands EPMT
HOST PARK: Haleakala

Florida Partnership EPMT
HOST: Southeast Environmental Research Program, Florida International University, Miami, FL Florida Parks.

Chihahuan Desert/Southern Shortgrass Prairie EPMT
HOST PARK: Carlsbad Caverns.

National Capitol Region EPMT
HOST PARK: Rock Creek Park

Exotic Plant Management Teams that have been approved for 2002 Fiscal Year .

Northern Great Plains EPMT
HOST PARK: Theodore Roosevelt

California EPMT
HOST PARK: Point Reyes

Gulf Coast EPMT
HOST PARK: Big Thicket

Columbia Cascades EPMT
HOST PARK: Northern Cascades,

Invasive Species and the Conserva

What Environmentalists Haven't Done

Let's begin by thinking about lather leaf (*Colubrina asiatica*) in Everglades National Park. An invasive, vine-like shrub from tropical Asia, lather leaf is spreading rapidly through the park's coastal hammocks and mangrove swamps. This climbing invader shrouds and kills buttonwood, mangroves, and other native vegetation.

Lather leaf constitutes a significant threat to an area of exceptional biological value. Yet, due to budget constraints, little has been done to combat lather leaf, though very recently a fair amount of money was procured for that purpose. (We should note that the National Park Service, as well as assorted other federal, state, and local agencies, has committed considerable resources to battling invasives around the nation. Unfortunately, considerable isn't enough.) A lack of funding likewise prevented park managers from eradicating lather leaf when it first appeared, when a paltry \$20,000 or so would have done the job.

One would expect the conservation community to be in a lather over lather leaf. The health of the park is prominent on the agendas of numerous environmental groups, who are striving to improve its water pollution and water supply problems. Imagine the protests from conservationists if a corporation attempted to drill oil wells along the park's coast, yet lather leaf and its ilk pose a greater long-term danger than would oil wells. The conservation community has given some attention to melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casuarina spp.*), and Brazilian pepper (*Schinus terebinthifolius*), the high-profile Everglades exotics, but even in these cases the amount of attention falls short of what the situation warrants.

The modest engagement by the conservation community regarding invaders of natural areas is not confined to Everglades National Park. Only a few environmentalists have expressed concern about efforts to bring raw logs from Siberia into the western United States, which might introduce the voracious Asian gypsy moth (*Lymantria dispar*) and other invasive insects and pathogens that could devastate vast expanses of western forests. Few conservation groups have pressed for the control of Chinese tallow (*Sapium sebiferum*), though this insidiously pretty tree is overrunning coastal prairies throughout the South, including habitat vital to endangered species icons, such as the Whooping Crane (*Grus americana*). Nor have many environmentalists called for

the control of the balsam wooly adelgid (*Adelges piceae*), salt cedar (*Tamarix spp.*), the green crab (*Carcinus maenas*), and the many other invasive exotic species plague natural areas all over the United States.

What Environmentalists Have Done

Though the conservation community has not given invasive species the attention they merit, it has spent some time and resources on the issue. A number of small local and state organizations have devoted much of their modest capacities to the matter. For example, various native plant societies convey information regarding invasives to their members and to the press, encourage government and business to address the problem, and organize local removal and restoration efforts. People in several states formed exotic pest plant councils (EPPCs), which typically consist of individual scientists, land managers, and conservationists who are concerned about invasive plants. These EPPCs provide a clearinghouse for information regarding invasives and bring the issue to the attention of their organizations, policy makers, and the media.

At the national level, a number of conservation organizations at least have the invasion on their radar screens. The most involved is the Nature Conservancy (TNC), one of the nation's largest conservation groups. TNC is unusual among such organizations in that it owns and manages large amounts of land; there are about 1,300 TNC preserves in the U.S. alone. TNC's interest in exotics has focused mainly on combating invasives in its preserves; given that many TNC lands have been invaded, the group had little choice but to deal with invasives.

The National Audubon Society owns and manages some preserves and, like TNC, has been battling invasives on its properties, but the other major national conservation groups don't own land and haven't been similarly compelled to confront invasive species. However, some of these large, land-less organizations, such as Defenders of Wildlife, blend a consideration of invasive species into their other programs. For instance, in their biodiversity strategy for Oregon, Defenders highlights problems with invasive species in each ecoregion.

Many other examples exist. Conservationists have referred to invasives in lawsuits seeking endangered species status for sage grouse and in concerns about global trade. They've testified at Congressional hearings on biological control.

tion Community

By: Bob Devine, Executive Director of the Environmental Working Group on Invasive Species

Environmentalists have published booklets, magazine articles, and technical manuals regarding invasives. Nonetheless, given the magnitude of the alien invasion, the efforts of the conservation community have been insufficient and scattered.

Reasons Environmentalists Haven't Done More

One reason can be appreciated by anyone working in wildlife management; conservationists lack the resources to painlessly mount anti-invasive species campaigns. Most major environmental organizations have officers and staffers who would like to devote more time to invasive exotics, but these individuals already are working on water pollution, forests, wetlands, global climate change, and myriad other vital issues. They're reluctant to neglect any of their current responsibilities and they're reluctant to pile more hours onto their already overloaded work weeks in order to tackle invasives.

The public's lack of familiarity regarding exotics puts conservation organizations in something of a Catch-22; their members know little about invasives and therefore it's hard for the organizations to make exotics a high priority, but until those organizations make exotics a high priority, their members aren't likely to know or care much about invasives.

Even when conservation organizations elect to take the initiative in educating their members, which many have begun doing, the nature of the invasive species problem complicates the learning process. It is easy to communicate the harm caused by a clearcut or an oil spill. A single dramatic photograph can stir concern, even action. People don't have quite the same response to a photo of a wetland lush with the lovely blossoms of purple loosestrife (*Lythrum salicaria*).

It's harder still to convince people that the health of the land dictates the control of mountain goats (*Oreamnos americanus*) in Olympic National Park or wild horses (*Equus caballus*) in the Great Basin. Even when the animals can be removed without killing them, many members of conservation groups and the public voice concern. When the elimination of invasive animals does involve killing them, that concern

sometimes erupts into fierce protest. Some conservation organizations have experienced nasty confrontations with animal rights groups, and the fear of stirring up vocal animal advocates sometimes inhibits the anti-invasives efforts of the conservation community. And it's more than a public relations problem. Many conservationists have legitimate concerns that invasive animals may endure unnecessary pain and death in the course of control programs. Taking such concerns into account can complicate matters, even when people acknowledge the greater good of keeping the ecosystem healthy.

As with the control of alien animals, the use of chemical pesticides to fight invasives creates dissension within the ranks of environmentalists. Reducing pesticide pollution has long been one of the defining tenets of the environmental

movement and it's a tough sell to make an exception in the case of invasive species. And most environmentalists feel that it should be a tough sell, that the use of pesticides on invasive organisms should receive close scrutiny. Many conservationists may resign themselves to occasional pesticide use as a lesser evil than an unchecked invasion, but they worry that pesticides may be applied too freely and not only as a last resort. They also worry that some land managers might use chemicals as a crutch, postponing the need to make basic changes in the way some lands are used.

Animal control and pesticide use are two examples of a fundamental

dilemma that the conservation community must work through as it comes to grips with the alien invasion. Many environmentalists distrust active management. They've seen excessive logging done in the name of forest health and the control of native predators in order to protect livestock. Specifically in the realm of invasive species, environmentalists often have seen active management go awry. They remember such fiascos as the importation of opossum shrimp

"Our overarching goal is to make sure that the conservation community does indeed recognize invasive species as a major problem, and that they do so soon, rather than after we have a world of weeds."

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(*Mysis relicta*) into the Flathead River-Lake system in Glacier National Park to boost game fish populations, which started an ecological ripple effect that decimated the whole community.

Yet many invasive species can't be controlled without some active management. The conservation community's default position of "leave it alone" works well when trying to protect wild lands from logging, mining, grazing, urban sprawl, oil exploration, ski development, and the like. But a hands-off approach often is not sufficient to repel invasive species. For one thing, non-native species already have invaded a great many natural areas and invasives seldom go away on their own. But even many pristine wildernesses eventually will be invaded to some degree unless managers actively prevent invasion and carry out early detection and eradication programs. The conservation community sooner or later (and I hope sooner) will need to determine the appropriate role for active management of invasive species.

"The public's lack of familiarity regarding exotics puts conservation organizations in something of a Catch-22."

What Environmentalists Will Do in the Future

I don't know. But I do have some ideas and some hopes.

I am the executive director of the Environmental Working Group on Invasive Species (EWGIS), a new entity formed in November, 1999. So far we have members from American Lands Alliance, the Center for Marine Conservation, Defenders of Wildlife, Environmental Defense, National Audubon, the Nature Conservancy, Sierra Club, the Wilderness Society, and the World Wildlife Fund. In addition, we're forming a wide network of scientists, land managers, industry representatives, private land owners, government officials, and conservationists whose groups aren't represented on EWGIS.

Our mission is to energize and focus the anti-invasion efforts of the conservation community in order to protect our nation's wild lands. We hope to perform some functions that have been largely neglected within the conservation community. For example, EWGIS will be a forum for multi-organization discussions on invasives and a clearinghouse for conservation-oriented information regarding non-native invaders. Perhaps most important, EWGIS can be the unifying force that brings environmental groups together to pursue anti-invasives initiatives. An informed and determined environmental

community can help fundamentally shape invasive species policy.

We also hope to help conservation organizations address invasive exotics in the context of their other programs. Many of our efforts to solve environmental problems falter because we look at things in isolation, not as dynamic ecosystems. We need to make sure that when people gather around a table to discuss a forest plan or a river corridor restoration or an endangered species study, they also consider invasives.

So much for sweeping, even grandiose, intentions. Though EWGIS is so new that we don't yet have all our detailed goals nailed down, we can get specific about a few of the things we may urge an energized conservation community to accomplish. For example, we'd like to convey the conservation community's views to the framers of the National Invasive Species Management Plan, a document mandated by President Clinton's 1999

executive order on invasive species. We'd like to strengthen existing legislation regarding invasive species, such as the Federal Noxious Weed Act, and make it more attuned to the needs of natural areas. We'll urge government, business, and non-profits to substantially increase their spending on invasives. We'll press for improved screening for invasives at U.S. borders, particularly invaders of natural areas, which currently get little attention from the agriculture-oriented screeners.

We have other specific goals, and no doubt many more will crop up as the invasion rises to take its rightful place alongside habitat loss, pollution, global warming, and the other urgent environmental issues of the day. Our overarching goal is to make sure that the conservation community does indeed recognize invasive species as a major problem, and that they do so soon, rather than after we have a world of weeds. ❖

This article was reprinted from the Fall 2000 issue of "Wildland Weeds." It was contributed by Bob Devine, Executive Director of the Environmental Working Group on Invasive Species and the author of the book "Alien Invasion," published by National Geographic in 1998. He can be contacted at (541) 752-2212, or devine523@attbi.com



Toolbox: High Country Sprayers

TOOL BOX highlights new tools that might integrate well into local weed management tool boxes. Noxious Times does not specifically endorse tools featured, but rather strives to provide baseline data that will lend towards further examination and research on the part of the user.

I have been the Cassia County Weed Superintendent since 1985. As a weed control Supervisor in Idaho I recognized the need for a better, easier, and more efficient way to spray mountainous and heavy terrain areas. I have developed and tested this horseback sprayer over the past 15 years and find it to be a very cost-effective, easily used tool in our weed management program. We have found that we can spray more ground with a horseback sprayer than we can with a four-wheeler because we can travel to and from those areas so much easier and quicker. With the use of these horse-mounted sprayers we are able to leave the environment with no trace that we have ever been there other than dead noxious weeds, unlike 4 wheelers that leave wheel tracks.

We have decreased our chemical use and increased our workers' effectiveness with the use of these spray tanks. We have found that by starting at the top of the hill in those isolated patches we are able to push the noxious weeds down the canyon, thus increasing our desirable vegetation while eliminating the noxious weeds. With this sprayer you can single out one weed or take out a patch of weeds. With its adjustable spray nozzle you are able to cover up to 4 acres per 24 gallons of mixture. With the ability to siphon from most water sources this sprayer makes it possible to spray all day without having to return to your vehicle. By simply carrying your chemical with you, you are able to mix, load and continue to spray. By using horseback sprayers to carry our chemical instead of four-wheelers, trucks, or aircraft we are able to locate isolated areas in places that would be impossible to find or reach with a motorized vehicle. This sprayer is excellent for hard to reach areas in forests and mountains, as well as streams. We will deliver and set up each and every set.

Courtesy of Gordon Edwards



Product and Contact Information

Included: 2 - 12-gallon lightweight durable plastic tanks, 1 - 12 Volt Deep Cycle Gel Cell battery (8 hrs continuous spraying), Shur-Flo pump which pumps 3.5 gpm @ 45 psi, Tee Jet gun with size 26 nozzle
Total weight: 230-250 lbs

High Country Sprayers Owner: Gordon O. Edwards, 1995 S. Elba-Almo Hwy., Elba, ID. 83342. Phone: 208-638-5548

Sales: Kris K. Edwards

hcspray@atcnet.net



Upcoming Events/ Resources:

Center For Invasive Plant Management : 2002 Grants

The Center for Invasive Plant Management is pleased to announce its 2002 grant program at www.weedcenter.org/grants/overview.html. Grants are available for Restoration Case Studies, Seed Money, Applied Science, Multidisciplinary Research Planning, Cooperative Weed Management Areas, and Citizen Involvement. Application deadline, in most cases, is March 5.

Janet K. Clark, Director
Center for Invasive Plant Management
Montana State University
P.O. Box 173120
Bozeman, MT 59717
Tel: 406-994-6832
Fax: 406-994-1889
<http://www.weedcenter.org>

Pacific Northwest Weed Management Handbook.

This publication is available in printed and online forms and covers weeds of Washington, Oregon and Idaho. For more information: <http://weeds.ippc.orst.edu/pnw/weeds>.

Predicting Invasions of Nonindigenous Plants and Plant Pests

The prepublication version of this guide from The National Academy Press is available online at <http://www.nap.edu/catalog/10259.html>. A final printed version is forthcoming.

Job Announcement: Part Time Executive Director for CalEPPC

The Board of Directors of the California Exotic Pest Plant Council invites applications for the half -time

position of Executive Director of the Council. The Executive Director will manage the Council's operations from the successful candidate's home town. For more information email Mike Kelly at MKellySD@aol.com. The application deadline is February 15.

San Francisco Estuary Invasive Spartina Project new website

The new website for the San Francisco Estuary Invasive Spartina Project is now up!

The URL is <http://www.spartina.org>. Maps of current invasive Spartina locations are available, as well as downloadable identification brochures and photos from our 2000-2001 surveys.



California Interagency
Noxious Weed Coordinating
Committee
Noxious Times

1220 N Street, Room A-357
Sacramento, CA 95814

return services
requested